Claims:

1. A process for obtaining energy values contained in a sulphur-containing carbonaceous fuel, said process comprising

(a) treating a feed carbonaceous fuel having a first bound-sulphur content with an effective amount of an oxygen and SO_2-containing gas in a reactor at an effective temperature to

(i) provide elemental sulphur from said SO_2,

(ii) release exothermic heat, and

(iii) produce a hot effluent gaseous steam containing said elemental sulphur and treated fuel having a second bound-sulphur content;

(b) separating said elemental sulphur from said treated fuel;

(c) collecting said elemental sulphur;

(d) collecting said treated fuel; and

(e) collecting said exothermic heat.

2. A process as defined in claim 1 wherein said SO_2 is generated by combustion in air of a portion of said fuel.

3. A process as defined in claim 1 wherein said second bound-sulphur content is higher than said first bound-sulphur content.

4. A process as defined in claim 1 wherein said treated fuel is recycled back to said reactor.

5. A process for obtaining energy values contained in sulphur-containing carbonaceous fuel, said process comprising

(a) burning a first sulphur-containing carbonaceous fuel in an oxygen-containing gas in a combustion boiler to produce

(i) exothermic heat; and

(ii) a first combustion oxygen-lean gaseous stream comprising sulphur dioxide;

(b) collecting said exothermic heat;

(c) feeding said first combustion gaseous stream to a reactor containing a second sulphur-containing carbonaceous fuel having a first bound-sulphur content;

(d) reacting said second fuel with said first combustion gas in an oxygen-containing atmosphere at an effective temperature to

(i) produce elemental sulphur from said SO_2;

(ii) release reactor exothermic heat; and

(iii) produce a second combustion gaseous steam containing said elemental sulphur and a treated fuel having a second bound-sulphur content;

(e) separating said elemental sulphur from said treated fuel;

(f) collecting said elemental sulphur;

(g) collecting said treated fuel; and

(h) producing a separated combustion stream.

6. A process as defined in claim 5 further comprising collecting said reactor exothermic heat.

7. A process as defined in claim 5 further comprising passing said separated combustion stream through an effective amount of said separated treated fuel at a temperature lower than said reactor temperature to effect absorption of any residual SO_2 in said separated combustion stream and provide essentially SO_2-free off-gas.

8. A process as defined in claim 5 further comprising cycling said separated treated fuel to said combustion boiler and/or said reactor.

9. A process as defined in claim 5 wherein said first combustion gaseous stream is cooled to said effective temperature.

10. A process as defined in claim 5 wherein said effective temperature in said reactor is selected from 400°C-800°C.

11. A process as defined in claim 1 wherein said treated fuel has a higher sulphur content than said fuel.

12. A process as defined in claim 7 wherein said temperature of said separated treated fuel is selected from 150-250°C.

13. A process as defined in claim 1 wherein said sulphur content in said carbonaceous fuels is greater than 3% w/w.

14. A process as defined in claim 5 wherein said separated treated fuel contains at least 8% w/w bound sulphur.

15. A process as defined in claim 1 wherein said carbonaceous fuel is selected from a coal and petroleum coke-containing at least 5% w/w S.

16. A process as defined in claim 15 wherein said petroleum coke is fluid coke.